

WHAT IS CLAIMED IS:

1. An electrosurgical pencil, comprising:
an elongated housing having a blade receptacle provided at a distal end
5 thereof;
an electrocautery blade supported within the blade receptacle, the blade having
a distal end extending distally from the housing and a proximal end extending into the
housing;
an activation button electrically coupled to the blade; and
10 a strain gauge affixed to the electrocautery blade for measuring a displacement
of the blade.
2. An electrosurgical pencil according to claim 1, wherein the activation
button is supported on the housing.
- 15 3. An electrosurgical pencil according to claim 1, wherein the strain
gauge is affixed to a proximal end of the electrocautery blade.
4. An electrosurgical pencil according to claim 1, further comprising:
20 a meter which is at least one of electrically and optically connected to the
strain gauge for monitoring at least one of a change in voltage, a change in electrical
current and a change in optical wavelength.
5. An electrosurgical pencil according to claim 4, wherein the strain
25 gauge is one of a wire, a foil, a semiconductor material and an optical transducer.
6. An electrosurgical pencil according to claim 5, wherein the strain
gauge includes a temperature compensator resistor electrically coupled to one of the
strain gauge or a temperature compensated transducer, the compensator resistor being
30 configured and adapted to compensate for displacement variations due to changes in
temperature.

7. An electrosurgical pencil according to claim 5, wherein the semiconductor material is a piezoresistive material.

5 8. An electrosurgical pencil according to claim 1, further comprising:
means for producing a signal when the strain gauge measures a displacement
of the blade which satisfies a predetermined level.

9. An electrosurgical pencil according to claim 8, wherein the means for
10 producing a signal include a feedback system which produces at least one of an
audible and a visible signal.

10. An electrosurgical instrument, comprising:
a housing;
15 an electrocautery blade supported within the housing and extending partially
therefrom, the blade being coupled to an electrosurgical generator which provides
electrosurgical energy to the blade;
an activation switch coupled to the generator which permits selective
activation of the electrocautery blade; and
20 a strain gauge in communication with the electrocautery blade for measuring a
displacement of the electrocautery blade.

11. An electrosurgical instrument according to claim 10, further
comprising means for monitoring at least one of a voltage, an electrical current and an
25 optical wavelength passing through the strain gauge.

12. An electrosurgical instrument according to claim 10, further
comprising means for monitoring at least one of a change in voltage, a change in
electrical current and an optical transducer.

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13. An electrosurgical instrument according to claim 10, wherein the strain

gauge is one of a wire, a foil, a semiconductor material and an optical transducer.

14. An electrosurgical instrument according to claim 10, further comprising:

5 means for producing a signal when the strain gauge measures a displacement of the blade which satisfies a predetermined level.

15. An electrosurgical instrument according to claim 10, wherein the electrosurgical instrument is an electrosurgical pencil having an elongate housing.

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16. An electrosurgical instrument according to claim 10, further comprising:

a signal producing device configured and adapted to produce a signal when the strain gauge measures a displacement of the electrocautery blade, the
15 electrocautery blade providing a sensory input to the electrosurgical generator control circuitry which in turn modifies the generator output waveform.

17. An electrosurgical instrument according to claim 10, further comprising:

20 a control circuit electrically coupled between the electrocautery blade and the electrosurgical generator, the control circuit being configured and adapted to control power supplied to electrocautery blade based on the displacement measured by the strain gauge.

18. An electrosurgical instrument according to claim 17, wherein the control circuit increases the power supplied to the electrocautery blade when the displacement of the electrocautery blade measured by the strain gauge is greater than a preset value and decreases the power supplied to the electrocautery blade when the displacement of the electrocautery blade measured by the strain gauge is less than a preset value.
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